

CLAIMS

1. A video display system for displaying a video image, comprising:

a video projection light outputting unit operable to output a

5 video projection light for displaying a video image;

an image receiving unit operable to display the video image by receiving the video projection light;

a displacement deriving unit operable to detect a display position of the video image to be displayed on said image receiving unit, and to derive a displacement of the display position of the video image; and

a video projection light controlling unit operable to control an output mode of the video projection light so as to suppress the displacement derived by said displacement deriving unit.

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2. The video display system according to Claim 1,

wherein said displacement deriving unit includes a light sensor which detects the video projection light received by said image receiving unit and outputs a light detection signal corresponding to a result of the detection, and said displacement deriving unit is operable to derive the displacement of the display position of the video image based on a change in the light detection signal outputted from said light sensor.

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3. The video display system according to Claim 1,

wherein said displacement deriving unit includes an imaging unit operable to capture the video image to be displayed on said image receiving unit, and said displacement deriving unit is operable to derive the displacement of the display position of the video image based on a result of the image capture by said imaging unit.

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4. The video display system according to Claim 1,
wherein said video projection light controlling unit is
operable to change a direction of the video projection light.

5 5. The video display system according to Claim 4,
wherein said video projection light controlling unit includes a
reflecting mirror which receives the video projection light, and said
video projection light controlling unit is operable to pivot said
reflecting mirror so as to change the direction of the video
10 projection light.

6. The video display system according to Claim 4,
wherein said video projection light controlling unit is
operable to pivot said video projection light outputting unit so as to
15 change the direction of the video projection light.

7. The video display system according to Claim 1,
wherein said video projection light controlling unit is
operable to change an output position in said video projection light
20 outputting unit, from which the video projection light is outputted.

8. The video display system according to Claim 7,
wherein said video projection light outputting unit is
operable to generate a video projection light which represents a
25 picture, based on a picture signal indicating details of the picture,
and

said video projection light controlling unit is operable to
change the output position in said video projection light outputting
unit by performing signal processing on the picture signal so as to
30 change a position of the picture indicated by the picture signal.

9. The video display system according to Claim 1,

wherein said video projection light outputting unit is a projector which projects a video projection light in a predetermined direction, and

5 said image receiving unit includes a display screen which receives the video projection light and displays the video image.

10. The video display system according to Claim 9,

10 wherein said video projection light outputting unit includes a filtering unit operable to make a light transmittance per pixel variable, and said video projection light outputting unit is operable to generate a video projection light from a light transmitted through said filtering unit, and

15 said video projection light controlling unit is operable to change an output position in said video projection light outputting unit, from which the video projection light is outputted, by moving said filtering unit.

11. The video display system according to Claim 9,

20 wherein said video projection light outputting unit includes a video image reflecting unit operable to make a light reflectivity per pixel variable, and said video projection light outputting unit is operable to generate a video projection light from a light reflected by said video image reflecting unit, and

25 said video projection light controlling unit is operable to change an output position in said video projection light outputting unit, from which the video projection light is outputted, by moving said video image reflecting unit.

12. The video display system according to Claim 1,

30 wherein said video projection light outputting unit is operable to output the video projection light so as to be viewed directly, and

said image receiving unit includes a reflecting mirror which reflects the video projection light so as to display the video image.

13. The video display system according to Claim 1, further comprising

a distortion detecting unit operable to detect a distortion in a video image to be displayed on said image receiving unit, and

said video projection light controlling unit is further operable to control an output mode of the video projection light so as to suppress the distortion in the video image detected by said distortion detecting unit.

14. The video display system according to Claim 13,

wherein said video projection light outputting unit is operable to generate the video projection light which represents a picture, based on a picture signal indicating details of the picture,

said distortion detecting unit is operable to detect the distortion in the video image by detecting a distance between said video projection light outputting unit and each of at least three parts on an image receiving surface of said image receiving unit for receiving a video projection light, and

said video projection light controlling unit is operable to change a shape of the picture indicated by the picture signal so as to suppress the distortion in the video image detected by said distortion detecting unit.

15. The video display system according to Claim 14,

wherein in the case where the picture indicated by the picture signal is rectangular, said video projection light controlling unit is operable to derive, based on the distance detected by said distortion detecting unit, one of (a) a ratio between two sides of the picture which are approximately opposed to each other and (b) a

coordinate position of each vertex of the picture, as a parameter which represents a shape-changed picture, and to change the shape of the picture indicated by the picture signal according to the parameter.

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16. The video display system according to Claim 15,
wherein said distortion detecting unit includes:
a transmitting unit operable to transmit a radio signal from
the each part on the image receiving surface;

10 a receiving unit operable to receive the radio signal
transmitted from the each part, at a position where said video
projection light outputting unit is placed; and

a distance deriving unit operable to measure time between
the transmission of the radio signal from said transmitting unit and
15 the reception of the radio signal at said receiving unit, and to
derive a distance between the each part and said video projection
light outputting unit.

17. The video display system according to Claim 15,
20 wherein said distortion detecting unit includes:
a position detecting unit operable to detect a position of the
each part on the image receiving surface; and

a distance deriving unit operable to derive a distance
between the each part and said video projection light outputting
25 unit based on a result of the detection by said position detecting
unit.

18. The video display system according to Claim 14,
wherein said distortion detecting unit includes:
30 an imaging unit operable to capture an image of said image
receiving unit; and

a distance deriving unit operable to derive a distance

between the each part on the image receiving surface and said video projection light outputting unit based on a result of the image capture by said imaging unit.

5 19. The video display system according to Claim 13,
wherein said video projection light outputting unit is operable to generate the video projection light which represents a picture based on a picture signal indicating details of the picture, and

10 said video display system further comprises:

a position detecting unit operable to detect a display position of a video image to be displayed on said image receiving unit; and

15 a video image position keeping unit operable to keep the display position of the video image so that the video image is displayed within a predetermined area on said image receiving unit, by performing signal processing on the picture signal so as to change a position of the picture indicated by the picture signal, based on a result of the detection by said position detecting unit.

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20. The video display system according to Claim 19,
wherein said position detecting unit includes a light sensor which detects the video projection light received by said image receiving unit and outputs a light detection signal corresponding to
25 a result of the detection, and said position detecting unit is operable to detect the display position of the video image based on the light detection signal outputted from the light sensor.

30 21. The video display system according to Claim 13, further comprising:

an imaging unit operable to capture an image of said image receiving unit; and

a video image position keeping unit operable to keep a display position of the video image so that the video image is displayed within a predetermined area on said image receiving unit, by changing a direction of the video projection light outputted from
5 said video projection light outputting unit, based on a result of the image capture by said imaging unit.

22. The video display system according to Claim 13, further comprising

10 a pivoting unit operable to pivot said image receiving unit so as to change an orientation of an image receiving surface of said image receiving unit for receiving a video projection light.